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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/692,871	10/24/2003	Richard R. Dickson	00-714.1	1952
719	7590	11/29/2004	EXAMINER	
CATERPILLAR INC. 100 N.E. ADAMS STREET PATENT DEPT. PEORIA, IL 616296490			FAYYAZ, NASHMIYA SAQIB	
			ART UNIT	PAPER NUMBER
			2856	

DATE MAILED: 11/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/692,871

Applicant(s)

DICKSON ET AL.

Examiner

Nashmiya S. Fayyaz

Art Unit

2856



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-52 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 14-52 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7-6-04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 19-23, 26-33 and 39-52 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 19, on line 2, "the flow of intake air" lacks antecedent basis. In claim 20, "said laminar flow element" lacks antecedent basis. In claim 25, it is unclear how the solenoid valve is "connected in parallel"; the connection does not appear to be "in parallel". In claim 26, "said transient dilution air controller" and "the dilution airflow" lacks antecedent basis. Further, the recitation is unclear since it is not understood how the dilution air controller "divides" the airflow into a "constant" and "variable" flow stream. It appears that the airflow comprises a constant and variable stream but is not divided into such. In claim 31, "the flow of intake air" lacks antecedent basis. In claim 39, on line 2, "and supply dilution air" is unclear. In claim 39, "the flow of intake air" lacks antecedent basis. In claim 44, "coarse" is unclear. In claim 45, again how does the "means for controlling" divide the dilution airflow?
3. Claim 37 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it

pertains, or with which it is most nearly connected, to make and/or use the invention. It is unclear how a probe is a "square root extractor".

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hendren et al. (PG Pub # U.S. 2003/0136177). As to claims 14-52, Hendren et al disclose an emission sampling apparatus including a dilution tunnel 20 with inlet 17 with a sampling system 70/72/74 , exhaust 11 of engine 12, flow control valve 28, second mass flow controller 36, filter 34 with a dilution air control arrangement or means for controlling dilution air 42/50, see figs. 1-2. Further, it is noted that a mass flow controller, per se is not designated by Hendren et al. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to have designated the computer controlled solenoid valve 28 with pump 29 as a mass flow controller as it performs the function of controlling the flowrate. As to claims 17 and 36, note probe 15. As to claims 18 and 38, Hendren et al disclose usage of ambient air but lacks usage of "scrubbed" or filtered air. The expediency of scrubbing or filtering is old and well-known in the art of dilution to further purify the air. Therefore, it would have been obvious to

Art Unit: 2856

one of ordinary skill in the art at the time of the invention to have included an indication that the air is scrubbed and filtered in order to avoid the inclusion of extraneous particles causing inaccurate results. As to claims 19-20 and 39-41, note flow measuring device 40 and pressure sensors as in par. 56-57 indicating a laminar element. As to claims 21 and 42, note system control computer 50 which allows for receiving and recording of data from the sensors and to control of various functions by an adjustable parameter in the controlling software which invariably will include some form of a selectable gain circuit. As to claims 22-23 and 43-44, since various readings from one or more sensors may be used, it is possible to provide a single or a multiple channel input and since the computer provides input and output commands. As to claim 24, note pump 24. As to claims 25-33 and 45-52, as best understood, note valve 28 which provides a variable flow stream and has an input of a constant flow stream. As to claim 27, Hendren discloses a valve 28 which is connected to fixed flow rate pump 29 but lacks usage of a critical flow venturi. However, it is noted that it would have been obvious to one of ordinary skill in the art at the time of the invention to have substituted the fixed rate pump with a venturi since it is old and well-known that a venturi is used to control the flowrate to a fixed rate.

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA

Art Unit: 2856

1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claim 14-52 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-13 of copending Application No. 09/905698. Although the conflicting claims are not identical, they are not patentably distinct from each other because all the limitations of claims 14 and 34 of the present application are found in 09/905698, **as it is now amended**.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nashmiya S. Fayyaz whose telephone number is 571-272-2192. The examiner can normally be reached on Mondays and Thursdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron E. Williams can be reached on 571-272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

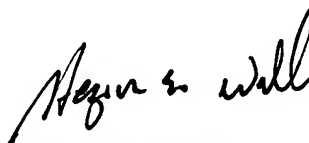
Art Unit: 2856

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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Examiner
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11/15/04



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